Canadian Hydrocarbons Limited

AN INVESTMENT STUDY
OF THE COMPANY WITHIN THE
NORTH AMERICAN L.P.G. MARKET

DEACON FINDLEY COYNE LIMITED
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"Nick, I think we are living in a new age of security analysis. We are now at the point where we have all the numbers you could possibly want. Moreover you can now do, quickly, anything you want to do with the numbers. This never happened before. What is needed now, and perhaps this is a constant through time, is a good idea."

— quoted by Nicholas Molodovsky in an article entitled "It's Good to Own Growth Stocks!" published in Financial Analysts Journal, Volume 19, #2.

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    Petrolane Gas Service, Inc.
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    National Propane Corp.

13. Canadian Hydrocarbons Ltd. 1963 prospectus.

14. Conversations with various civil servants in Ottawa, Calgary and Toronto and with management of Canadian Hydrocarbons Ltd.

DESCRIPTION OF LP GASES

The term liquefied petroleum gas includes propane (C3H8), normal butane (C4H10) and isobutane (C4H10).

Since isobutane has no commercial application, the term LPG is usually confined to propane and normal butane. The property which gives propane, and to a lesser extent butane, commercial value is the fact that LPG's are gaseous under normal atmospheric conditions but can be liquefied under moderate pressure at normal temperatures. The commercial products are mixtures of hydrocarbons. Commercial propane for example contains propane and butane, butylenes, propylene and possibly ethane or ethylene. LP gases may be transported, stored and handled with the convenience of a liquid and yet it is possible to burn them with all the convenience characteristic of fuel gases.

EXTRACTION OF LP GASES

LP gases are extracted from crude oil or from natural gases by refineries or from gas recovery plants. Refinery products generally include other fractions such as propylene in quantities from 5% to possibly 45% and butylenes in equally wide percentages. On the other hand, gas recovery plants produce propane with only small percentages of isobutane, ethane and butane and small percentages of pentane. A typical wet natural gas stream may contain as much as 7% propane and 3½% normal butane, only part of which can be recovered commercially. Two main processes are employed for the extraction of LP gases from field gas recovery plants, commonly called "absorption" and the "compression refrigeration" systems. In both systems the crude oil is first separated from the wet gas. The wet gas, which contains natural gas, LP gases and gasoline is then pumped to counter flow contact with absorption oil separating the natural gas, and from which LP gases and gasoline are fractionated into finished products. A compression refrigeration system employs pressures and refrigerants to handle and separate the product in its liquid phase. Although the advocates of this system consider it less expensive, more flexible and capable of providing better products than is possible with the absorption system, gas recovery plants in Western Canada are about 50% on absorption and 50% on compression-refrigeration. *Regardless of the method of production all propanes and butanes in Western Canada are refined to meet rigid specifications.*

In Eastern Canada most commercial LPG is produced by oil refineries in Ontario and Quebec.

These refineries use butanes in their processing, often having a net requirement for butanes. In addition, the petrochemical industry has a high demand for butanes as feed stock. Petrochemical plants receive from refineries a stream of hydrocarbons composed of C3's through C5's, extract what is required, and send

the rest back to the refineries. What is extracted contains large quantities of butane and goes to produce alcohols, acetates, detergents, plastics, organic acids, glycols and resins. In addition, large amounts of butane are used in butadiene for the manufacture of synthetic rubber.

After the refineries and petrochemical plants have extracted whatever LPG is required most of the remaining LPG is left for sale as commercial propane.

A singular fact about the LPG industry is this. *There is almost an uncontrollable surplus of product over demand.* While the versatility and practical application of propane in use would seem to be self evident, nevertheless the product must be marketed and distributed economically in order to prevent large-scale wastage. Propane may be used in refrigeration, cooking, water heating, air conditioning, clothes drying, incineration, lighting, house heating; in internal combustion engines, mobile laboratories, mobile kitchens, mobile diners and mobile libraries; in crop drying, poultry brooding, tobacco curing, irrigation and weed control; in metal cutting, brazing, heat treatment of metals, carbonizing steel, glass processing, baking, brick making, enamelling, electrical generating, drilling, road construction, flood lighting, and a multitude of other ways.

Oddly enough, the rapid expansion and utilization of natural gas in the United States has not minimized but has accentuated the need for propane to provide an adequate supplementary gas supply during peak load. So far in Canada this use of LPG has been exploited only occasionally. It is noted however, that Greater Winnipeg Gas Company, a gas public utility serving Metropolitan Winnipeg, has started construction of a 5,000,000 gallon refrigerated propane storage tank to provide adequate peak-shaving facilities before the next heating season.

TRENDS IN THE U.S. LP GAS MARKET

The U.S. LP Gas industry is well documented in contrast to the dearth of statistics in Canada, described in several quarters as lamentable. The U.S. industry also has overproduction of product. For example in 1961 LP gas production totalled 11,242,011,000 gallons. Sales totalled 9,797,883,000 gallons. End usage was as follows:

Domestic and Commercial	44%
Chemical	33%
Internal Combustion	9%
Synthetic Rubber	5%
Industrial	4%
Gas Manufacturing	2%
Refinery Fuel	2%
Secondary Recovery	1%
	100%

Over the preceding 5 years principal usage grew as follows:

Domestic and Commercial	45%
Chemical	88%
Synthetic Rubber	24%
Internal Combustion	9%

Other uses indicate erratic trend patterns and, in any event are relatively insignificant.

A further item which is of great importance towards understanding developments in the U.S. LP Gas industry is LPG transportation. From 1953, the first date when complete figures were available, to the end of 1961, the following methods of shipping LP Gas were used to the extent shown.

	1953	1961
Rail	54%	22%
Truck	42%	43%
Pipeline	3%	34%
Tanker and Barge	1%	1%

Because transportation costs absorb ½ to ⅔ of the retail price of propane, product pipelines emerge as a vital economic factor in effective marketing.

Despite the growth in U.S. LPG markets, supply continues to rise faster than demand due to the increasing use of petroleum products generally and natural gas production in particular. This trend tends to keep refinery prices low and enables distributors to offer LPG at competitive prices, simultaneously tending to boost profit margins on sales. In 1962 production capacity in the United States was enlarged by about 530 million gallons per annum, 4.7%. In that year 33 new plants went on stream and there were 7 major expansions. An additional 500 million gallons of annual capacity is expected to go on stream this year. On the retail level there are an estimated 25,000 distributors ranging from one man-and-a-truck operators to well integrated national organizations. Rising costs of distribution however, have hastened the trend towards consolidation. One of these companies, Suburban Gas, went too far in the eyes of the U.S. Justice Department in 1961. Thirteen separate acquisitions were challenged over a previous eight-year period and, as a result, Suburban was obliged to dispose of certain properties in the states of Washington and Oregon. A recent development in the U.S., which may indicate a trend, was the purchase by Texas Eastern Transmission Corporation, one of the U.S.'s largest pipelines, of the Pyrofax Gas subsidiary of Union Carbide Corporation for $24 million. Pyrofax, one of the earliest LPG distributors, and perhaps in recent years one of the least aggressive in

market development, has over 500,000 customers in 28 states. Texas Eastern immediately indicated that it intends to extend its pipeline system from Ohio to Philadelphia, a move into an area which has been notably laggard in the use of LPG's due to high transportation costs from the South-West U.S. From another view point, the purchase marks the first time that distributors will be competing directly with a pipeline for retail customers.

Another way in which distributors are attempting to reduce the transportation element in costing is through the use of jumbo tank cars. The need for larger tank cars and storage facilities, particularly underground, is perhaps the best reason why the LPG industry is being consolidated into stronger hands. In 1961, total LP Gas storage capacity at plants, terminals and refineries represented about 25% of total annual production. Of this 25%, 87% was located at underground plants, terminals and refineries.

TRENDS IN USAGE

Of all the residential and commercial uses for LPG, the most promising at the present time is flame cultivation on farms. Flame cultivation is said to weed cotton for between \$4 and \$5 per acre compared to \$14 or \$15 manually. Development of a similar market in Canada is possible. In fact it is used extensively in Ontario tobacco cultivation but is still in an experimental stage in the West. Climate may be the determinent in this case. Crops such as corn, cotton, soy beans, pop corn, peanuts, Irish potatoes, sugar cane, sugar beets and sweet potatoes lend themselves readily to flame cultivation. Some of these, it will be recognized, are Canadian farm products. Since LPG refinery prices are at their lowest in summer, it is essential that the Canadian industry pursue such innovations as "flame cultivation" to a logical conclusion. Other important growth aspects for LPG usage in the United States include carburation, tractors, and the chemical industry. Half of Chicago's buses are burning propane. Because propane burns so efficiently, and air pollution is becoming a vital concern in North American cities, one would expect the market to be developed aggressively in the years ahead.

THE CANADIAN MARKET

The early development of an adequate propane market in Canada was retarded by the necessity of importing large quantities from the United States to meet peak load demands and other demands throughout the year. According to the U.S. Bureau of Mines, Canada imported from the United States 53,907,000 gallons per annum in the period 1952-1956 inclusive. In 1957 a peak position of 56,274,000 gallons was reached and subsequently, Canadian imports dropped drastically to 4,134,000 gallons in 1961. In Western Canada, where an excess of product became evident at an earlier date, local production and supply was inadequate for demand until 1954. In that year the market required 23.7 million gallons. Local production provided 22.4 million gallons. This does not tell the whole story because *the imbalance or deficiency was made up during the winter months when refinery prices were at a peak and at a burdensome transportation cost.* This unsatisfactory position continued through to 1958. *In the interval Canadian marketers were inclined to check expansion to the minimum import required for winter months.* Moreover, because of inadequate storage facilities, a great many thousands of gallons of propane were either flared, burned as boiler fuel or returned to the ground. By 1952, two large petrochemical plants were located in the West and by 1957 twelve additional plants were established which required natural gas as a fuel and raw material. But only one of these plants, in operation in 1953, required propane and/or butane deliveries as raw material (Canadian Chemical). This market absorbed 10 million gallons per annum of fuel product, and an equal amount of refinery product. At around this time butane was first used in British Columbia at butane gas air plants to supplement manufactured gas supply in Vancouver and on Vancouver Island.

At the present time there are about 33 propane distributors operating in Western Canada, carrying on a propane business through 100 bulk plants, 120 retail outlets and assisted by 2,000 cylinder dealers. While there are 87 gas plants in Alberta, 6 in Saskatchewan and 1 in British Columbia, only 14 of the total 94 plants produce LP Gases. The dominant position which Canadian Hydrocarbons has achieved in the Western market is demonstrated by the fact that it conducts business through 60 bulk stations whereas the other 32 retail operators conduct business at approximately 40 bulk stations. In 1962 it is estimated that there was a total of 140,000,000 gallons of propane moved to market in Western Canada. Of this 60.2% went to domestic uses, 29% to the petrochemical industry, 24% to miscible flood, 20% industrial and commercial, 4% miscellaneous and 2.8% to carburation.

MISCIBLE FLOODING

"Miscible Flooding" is a form of secondary recovery similar to water flooding in which increased recovery of crude oil is obtained by the displacement of oil and replacement of depleted gas pressure by the injection of water into the formation. When LP Gas is used in flooding operations it is believed to have higher displacement efficiencies than water and hence is designed to yield higher crude oil recoveries. Most of the miscible flood propane used has been in the Pembina field. Experience does not seem to indicate that miscible flood has any particular advantage over water flooding. By mid-1963 the present miscible flood programme is to be terminated. *Due to the end of extensive miscible flood programming, additional quantities of propane will become available in the period immediately ahead.*

PRODUCTION AND MARKETS

Percentagewise, the growth in production of propanes and butanes has been much greater in Canada than in the United States in recent years. Thus the necessity for developing new markets and maximizing old ones becomes that much more essential. Among the four Western Provinces, production has grown as follows:

PRODUCTION

PROPANE — BUTANE

Millions of Gallons

1948 — 1962

	British Columbia		*Alberta*		*Saskatchewan*		*Manitoba*		*Total Western Canada*	
	Propane	*Butane*	*Propane*	*Butane*	*Propane*	*Butane*	*Propane*	*Butane*	*Propane*	*Butane*
1948			0.3						0.3	
1949			1.9						1.9	
1950			4.9	1.2					4.9	
1951			8.7	2.9					8.7	2.9
1952			11.8	4.9					11.8	4.9
1953	0.12		15.2	6.9					15.3	6.9
1954	0.42		18.5	8.6	1.9				20.8	8.6
1955	3.0		38.4	16.4	3.1		1.5		46.0	16.4
1956	3.2		42.5	31.0	3.7		3.7		53.1	31.0
1957	4.3	1.4	48.6	32.0	3.7	0.5	3.7		60.3	33.9
1958	10.0	8.0	50.0	38.0	18.4	5.4	3.9		82.3	51.4
1959	11.5	9.0	64.5	44.1	20.2	7.8	3.9		100.1	60.9
1960	12.0	9.0	83.0	50.6	22.4	9.5	3.8		121.2	69.1
1961	13.3	11.1	95.3	63.0	23.0	9.4	4.0		135.6	83.5
1962	15.6	13.1	112.3	85.0	24.3	9.5	4.0		156.2	107.6

F. L. Thompson in his work "Liquefied Petroleum Gases Western Canada" of January 1963, from which a portion of the above textual material has been borrowed, points out that the effect on prices of local production from 1948 to 1958, when it became necessary to import propane in order to accommodate the big winter demands, has been definitely downward. From the original 18¢ per gallon for propane experienced in 1947 in the province of Manitoba and Saskatchewan, prices in these areas dropped to an average f.o.b. price of 8¢ to 7¢ a gallon. In British Columbia, prices have not been affected to the same extent although they have been cut from 14¢ to a 10¢ to 11¢ per gallon price. Alberta prices of 10¢ per gallon were never as high as the wholesale prices landed in the other provinces. However the original 10¢ per gallon cost has dropped to an average of 5.75¢ to 6.5¢ per gallon at production plants. In the same period, butane has experienced a downward change from 5.6¢ per gallon to an average of 3¢ per gallon f.o.b. production plants. The factors affecting the supply-demand equation in Western Canada are as follows:

Supply:

1. Crude oil allowables
2. New oil production
3. Restrictions on export of crude
4. Restrictions on and/or export of natural gas
5. Refinery operations
6. Climate

Demand:

1. Freight rates
2. Climate
3. Storage
4. Competition from natural gas
5. Pipeline export
6. Eastern Market?
7. Petrochemical usage
8. Miscible Flood usage
9. Domestic usage
10. Carburation

ESTIMATED PRODUCTION AND MARKETS WESTERN CANADIAN PROPANE 1963-1967

Millions of Gallons

	1963	1964	1965	1966	1967
Production	201.6	354.2	384.9	413.9	417.2
Markets					
Domestic	91.5	98.8	106.6	115.0	124.0
Miscible Flood	12.0	—	—	—	—
Petrochemical	40.0	42.0	44.5	47.0	47.0
Miscellaneous	11.5	16.1	19.2	20.9	23.0
Total	155.0	156.9	170.3	182.9	194.0
Estimated Excess Production	46.6	197.3	214.6	230.4	223.2

Estimates made by the Oil and Gas Conservation Board for the Province of Alberta are substantially more conservative, but the same gap in trend between production and local Western Canadian markets is evident.

PACIFIC PETROLEUMS PRODUCTS PIPELINE

(Petroleum Transmission Company)

The tender for a 577-mile 6-inch product pipeline from Empress in South-Eastern Alberta through Regina to Winnipeg, Manitoba has been awarded. Basically the scheme is to extract up to 20,000 barrels of LPG per day from the main stream of the Trans-Canada Pipe Line gas. The plant is intended to extract 83% of the propane and virtually all the heavier carbons in the stream. Intermediate storage for propane will be built in Regina, halfway point on the line. Pacific is the plant operator and has exclusive marketing rights. Key to the project is Trans-Canada's commitment to buy all of its propane fuel requirements for its compressor stations from Pacific. The plant will use a refrigerated oil absorption system and facilities will include compression system, fraction product treating and storage units, tank car and tank truck loading facilities. Final authority from the National Energy Board of Canada was received in February 1963. Total cost of plant and pipeline: $33½ million. John Getgood, President and Chief Executive Officer of Pacific Petroleums Limited, pointed out in an address given in April 1963 that the best sales area on a per capita basis in the Canadian market was in the province of Alberta where the annual usage of LPG amounts to about 23 gallons per person. Alberta has a relatively highly developed LPG market because of consumer acceptance of gas as a product for many many years in that Province. According to Getgood, the pipeline will make it possible to create in the Eastern Provinces some of the satisfactory market conditions which now prevail in Alberta. First of all "there is going to be an abundance of product delivered to these areas. LPG is no longer going to be regarded as a kind of exotic fuel for cigarette lighters and aerosol cans. The pipeline to Winnipeg, with numerous take off points along the way will make large quantities of LPG available throughout the populated area of Saskatchewan and Manitoba. From Winnipeg, the markets of Ontario and Quebec can be supplied by jumbo tank cars which carry up to 30,000 gallons each. Because of its high heat content and comparatively small volume to weight, LPG can be shipped by rail much more economically than crude oil, coal and other fuels. This, plus the fact that it is being brought as far as Winnipeg by pipeline will make it possible to deliver large supplies of LPG at economic and competitive prices in the most populous areas of Eastern Canada". It is entirely possible that LPG sales in Saskatchewan could double and in Manitoba quintuple. Ontario and Quebec markets can absorb more than three times their present intake. Assuming that other provinces only come half way to meet the Alberta norm, would mean an increase of 50% in LPG sales in Canada. Alberta however, is not a saturated market. North Dakota, just across the border, has an annual usage of 66 gallons per capita as compared to Alberta's 23. On the other hand, the States immediately south of the 49th parallel bordering the Canadian Western Provinces have plentiful supplies of LPG, convenient storage, and marketing systems which have been developed and perfected over many years. On the basis of national figures, Canadian usage of propane is at present 1:27; that is to say U.S. sales were 27 times greater than Canadian domestic market sales. In relation to population this should be more like 1:11. If the Canadian market were ever to catch up to the U.S. situation or if it had in 1962, the Canadian market could have used 1,000 million gallons of propane rather than 400 million gallons which were sold. Getgood believes that despite the higher ownership of automobiles and larger secondary industrial development in the United States, Canada could do better than the U.S. with LPG. He points to the colder climate and the fact that natural gas distribution is not so highly developed, nor is it likely to be so for some years because a smaller Canadian population is spread so thinly over a wide area. Canada does have a proportionately larger farm population, historically the prime market for LPG, than the U.S., but the differential is tending to narrow. The exodus from the farms of North America to the cities is a continental phenomena paralleled by the trend to larger farm units. In the 1951-1961 decade, the farm population — people *living on farms* in localities *classed as rural* declined as follows:

Quebec	15.1%
Ontario	21.3%
Manitoba	19.5%
Saskatchewan	23.0%
Alberta	14.8%
British Columbia	15.2%

Most of the decline took place towards the end of the decade. But the rural population changed as follows in the same decade.

Quebec	— 1.4%
Ontario	+ 6.0%
Manitoba	— 4.3%
Saskatchewan	— 9.0%
Alberta	— 1.8%
British Columbia	+11.7%

Such a comparison implies:

1. a decisive shift away from farm living
2. a tendency for the rural community to retain its population and notably in Ontario and British Columbia, to expand.

THE ONTARIO MARKET

In Ontario, commercial use of LPG on a large scale is of recent origin. Because of the lack of regulation and supervision of past years as well as secrecy maintained by much of the industry, important series of data are lacking. The element of secrecy is explained in part perhaps by the fact that a surplus exists for most of the year. Refinery price structures are vulnerable and large quantities are burned off when unsaleable.

Most of the LP gases in Ontario are produced by oil refineries who regard them as minor products. While the purchase by British American Oil of Superior Propane would indicate a renewed interest on the part of the major refining companies operating in Ontario in LP gases, the fact is that oil companies are not too enthusiastic towards this particular industry because it is a direct competitor with the largest revenue producing products which they have, fuel oil and potentially, gasoline. Hesitancy is a constant to all those who attempt to estimate the potential size of the Ontario market for the present figures available, including those

by D.B.S., are not only inadequate in concept but contain a multitude of actual mathematical inconsistencies. The Minister of Energy Resources for the Province of Ontario pointed out last year that this lack of statistics makes it very difficult to examine the overall performance of the industry, discern trends and develop markets. We do know, however, that in 1960 approximately 40 million gallons of commercial LP gas were used in the Province of Ontario of which 57% were distributed in bulk and 43% in cylinders. It has been estimated that of the rural areas that could be converted to LPG use for cooking, water and space heating, additional sales to such areas could absorb 38 million gallons per annum, or almost as much propane as was distributed in the year 1960 for all purposes including commercial and industrial! A long range forecast, which takes us into 1980, suggests a possible residential and commercial market demand for LP gas in Ontario to be in the order of 70 million gallons per annum.

Of great importance in Ontario is the fact that the use of LP gas for petrochemical feed stocks is growing rapidly. *The use of LP gas for petrochemical feed stock is likely to outstrip the quantity which can be produced by Eastern refineries and may possibly provide a market for Western suppliers of propane in the near future.* A rough estimate indicates that approximately 75 million gallons of LP gas were consumed by the petrochemical industry in 1960 and this is expected to rise to over 200 million gallons by the year 1980. Thus by the year 1980 the market for liquefied petroleum gas will have increased approximately three times that of its present consumption rate in the Province of Ontario.

While inexpensive storage is available in Ontario in the salt formations which parallel the shores of Lake St. Clair, the Detroit River and Lake Huron, the location of such storage is unfortunate for the existing general market distribution. Low temperature storage, mine caverns and other underground structures are necessary if the Ontario market is to be developed adequately. The fact that Ontario has a reasonably heavy summer load suggests once again the strength of the argument which leads Pacific Petroleums to believe that the day when Western product is marketed in Ontario is not distant.

INVESTMENT IN THE LPG INDUSTRY

Similarity to the Natural Gas Industry

1. The natural gas distributor and the LPG company are generally confined to a specific area or territory.
2. The LPG company's revenues tend to be less cyclical than the average industrial company. Like the natural gas distributor a large portion of sales is accounted for by space heating, cooking and other requirements.
3. Similarity of product and load builders for the LPG company are by and large the same as for a natural gas distributor. The impact of weather patterns is similar. Both types of companies require storage but load imbalance imposes a far greater penalty on the natural gas distributor because of the contractual nature of its supply.
4. Investment in plant is relatively high in an LPG distributor, although not so large as for a natural gas company. Debt in both cases usually accounts for a large part of the total capitalization. The differences, however, are striking.

Dissimilarities to the Natural Gas Industry

1. LPG companies are free from regulations. The profitability of the enterprise depends solely on the skill and ingenuity of management, economic conditions, and degree of competition. Natural gas facilities on the other hand are limited to a stated rate of return on invested capital or assets. Higher profits result in rate reductions.
2. The demand for LPG is growing more rapidly than the demand for natural gas in North America. This difference is particularly important. Management can exploit this growth to the maximum of its ability.
3. Natural gas is purchased by distributors from pipe lines on a long term contractual basis and by pipe lines from producers under long term fixed and/or escalated price contracts. The cost of transportation is therefore relatively inflexible as the pipe line is virtually the only feasible method of transporting gas. LPG on the other hand is frequently purchased from suppliers on a spot basis. Since LPG production depends entirely on the production of natural gas or the refining of oil, available supplies do not necessarily bear any relation to demand (see above). The price can therefore vary widely. Similarly the cost of transportation may vary widely within an LPG service area. The proposed and completed construction of several product pipe lines would likely result in major cost reductions.
4. Basically there are different properties in the two fields. The ease with which LPG can be liquefied opens up markets unavailable to natural gas.
5. Through merger or acquisition, LPG companies can and have materially enhanced their earnings growth potential. For most natural gas distributors such steps are neither practical nor economic. The net effect of this difference between LPG companies and natural gas distributors would seem to be this —

LPG weakens the underlying security of earnings but enhances considerably the relative growth potential. There is an ever present possibility of natural gas replacing LPG markets. (For Canadian Hydrocarbons, the introduction of natural gas in Saskatchewan lead to an almost complete though temporary loss of its propane market in a twelve month period.) LPG cannot compete directly with natural gas though it can be stated as a general proposition that the further natural gas is from its source the more competitive propane becomes. Both fuel forms use the same appliances: burner adjustments are minor. On the other hand the development of close-in suburbs is paralleled by growth in outlying areas. The LPG company does not necessarily lose all of its market after the gas line is extended. Motor vehicles for example continue to use LPG once having been converted to it. Other applications requiring ease of transportation and/or high heat contact are not lost. (LPG has three times the BTU value of natural gas.) Furthermore, the increased size of many companies in the business and relatively broad diversification and service areas minimizes the risk to LPG coincident with the expansion of natural gas. It is true then that the typical LPG stock does not represent as safe a holding as a franchised utility. There is, however, certainly no more risk than in an average investment situation, probably less because of the quasi-utility nature of the business.

CANADIAN HYDROCARBONS

Capital Structure as of March 31, 1963

DEBT —

6½% Sinking Fund Debentures due August 15th, 1981	$3,430,000	
6¼% Sinking Fund Debentures due December 15th, 1982	2,000,000	
Other Notes, Mortgages and Finance Contracts	570,412	$5,737,048

EQUITY —

Common shares of no par value —
3,500,000 authorized of which 761,940 are outstanding $9,274,485

Debt: Equity relationship — 40:60 approx.

NOTE: It is our understanding that this conservative relationship is to be maintained as much as possible.

Book Value per Share	$12.17
Yield	$1.2%
Price	$17
Price/earnings ratio	11.5 times 1962-63's earnings, 10.0 times 1963-64's estimated earnings.
Year end March 31,	
Number of shareholders	2,251 as of April 14th, 1963
Average shareholding	about 340 shares per shareholder.

Listed CDH Toronto, Montreal and Winnipeg Stock Exchanges.

HISTORY

Following the oil discovery at Leduc in 1947, a wave of exploratory oil well drilling was undertaken in the Western Provinces, particularly Alberta. In the course of this drilling, substantial reserves of natural gas were proven up, reserves far in excess of any reasonable forecast of the needs of the Province of Alberta. The question of how and when these reserves were to be removed from Alberta to their obvious economic markets in Eastern Canada and the U.S. Middle West became a matter of national concern. In the period leading up to the solution, the formation and financing of Trans-Canada Pipe Lines, some Canadian gas distributors made detailed plans to exploit natural gas in their respective market areas, if as and when it became available. One of these was the former Winnipeg and Central Gas Company — now the Greater Winnipeg Gas Company — which was operating in the City of Winnipeg with high cost manufactured gas. Winnipeg and Central decided to convert to a propane air mix as an immediate measure in preparation for the arrival of natural gas at the city gate sometime in the future. Going one stage further, Winnipeg and Central decided that it would be better to own the propane companies itself, in a sense a vertical and horizontal integration combined. Winnipeg and Central, with an eye to its own capital requirements for the expansion of natural gas services in the Winnipeg area could ill afford to purchase propane companies out of its own financial resources. In order to accomplish this manoeuver then, Canadian Hydrocarbons was incorporated under Dominion charter on January 31, 1955 and in March of that year the shareholders of Winnipeg and Central were offered four shares of Canadian Hydrocarbons at $7.50 per share for each five shares of Winnipeg and Central held. In this way Winnipeg and Central retained the largest single block of stock in Canadian Hydrocarbons. The Companies which Canadian Hydrocarbons was formed to purchase included control of Canadian Propane Limited, with six subsidiaries; Home Gas Limited, with three subsidiaries and Saskatoon Propane Gas Limited. How Winnipeg and Central's credit was overstrained in the period preceding the introduction of natural gas in the City of Winnipeg, aggravated by a delay in the start of pipeline construction by six months, its subsequent re-organization and success as a major natural gas distributor is another story. It is sufficient to note that in a time of troubles its large shareholding in Canadian Hydrocarbons was sold.

Canadian Hydrocarbons was incorporated to engage either directly or through investment in various integrated and diversified enterprises particularly in the field of hydrocarbons and other petroleum derivatives. As such it has the characteristics of a holding company and for many years carried a significant minority interest on its balance sheet which had been absorbed by 1961. At the present time, directly and through its subsidiaries, it is the largest distributor of propane gas and appliances in Canada. Its operations extend from North Western Ontario to the Yukon Territory and there are indications that the Company is taking an increasing interest in the Eastern Canadian and Northwestern U.S. markets. Much time and effort has been expended by management in the process of consolidating a host of subsidiaries, principally the holding company, Canadian Propane, and subsequently the minority interests in the subsidiaries of that company. This programme has continued to a point where it is fair to say that operations have been greatly simplified and efficiency improved. Since 1957 net earnings have tripled and propane gallonage sales doubled. Through this period management obtained the full benefit of an invaluable marketing experience. Because the Company is the major marketer of propane in Western Canada and is the principal agent for moving the growing sur-

plus of product to market, the Company's experience and viewpoint on matters affecting the LPG industry are important factors in the judgement of producers and government agencies.

The Company's subsidiaries operate bulk plants having a total storage capacity of approximately 1,345,000 imperial gallons of propane. In addition to the surface storage, Alberta Underground Storage Limited, an affiliated Company, has developed underground storage of approximately 20 million gallons at Hughenden, Alberta. A gas processing plant and gathering system in the Acheson Field near Edmonton is also owned and operated by one of the wholly-owned subsidiaries.

Alberta Underground Storage Limited was incorporated in 1959 in association with British American Oil Company Limited and Goliad Corporation to develop and provide underground storage of LP Gases. Canadian Hydrocarbons participates in this project to the extent of 40%. These facilities enable the Company to purchase propane from producers at a reasonable cost during the summer and ensure an adequate supply for consumers during the colder winter months when demand is at a peak. Ultimately storage capacity can be increased to 100 million gallons. It is only this year that the operations of Alberta Underground Storage Limited are expected to become profitable. On the other hand the indirect benefit — the ability to ensure an adequate supply of propane at peak load — has offset what may appear to have been an inadequate rate of return on invested capital in the project.

MARKETING

Canadian Hydrocarbons through its subsidiaries maintained 62 sales outlets and bulk storage plants as of mid-summer 1962. It is understood that this number has been increased due to the purchase of additional distribution outlets in the United States and Canada. The subsidiaries combined operate approximately 210 vehicles and are represented by more than 1,000 dealers. During the 1962 fiscal year 35 million Imperial gallons of propane were marketed and approximately 40 million gallons in the 1963 fiscal year. The companies have a combined staff of about 300 employees serving about 21,000 bulk customers, and 30,000 cylinder customers. The combined sales of the above organization in the years 1956 to 1962 inclusive were as follows:

PROPANE

	Gallons	*Dollars*	*Price Obtained ¢ Per Gal.*	*Merchandise*	*Other*	*Total*
1956	24,183,000	$5,299,192	21.9	$3,169,146	$328,940	$8,797,278
1957	25,354,000	5,769,572	22.76	2,225,508	80,108	8,075,188
1958	21,860,000	5,035,693	23.04	2,011,202	109,269	7,156,164
1959	23,853,000	4,969,771	20.8	1,971,542	169,330	7,110,643
1960	25,296,000	4,836,300	19.12	2,314,721	178,945	7,330,066
*1962	35,425,000	6,157,192	17.38	2,670,567	644,643	9,472,402
1963	39,210,201	6,674,612	17.02	2,982,902	754,377	10,411,891

*For the fiscal year ended March 31, 1962. Prior years ended on December 31.

Reduced sales volume of propane in gallons in 1958 and to some extent in 1959 is attributed by the Company to the introduction of natural gas in Saskatchewan and Manitoba on a large scale on completion of the Trans-Canada Pipeline. Thereafter, the Company experienced improved results by adding new customers replacing those lost to natural gas. The price obtained per gallons sold declined from 1958 to 1962 as the result of consignee accounts, lower refinery product prices and the policy of the corporation to pass this saving on to the consumer. Since 1958 an increasing gallonage of propane sales and concurrent reduction of the Company's overhead have resulted in substantially higher profits than in the years prior to 1958. During 1961 and the period thereafter both sales and earnings have continued in an upward trend interrupted only by non-recurring factors. In the year ended March 31, 1963 gross revenue exceeded $11,000,000 for net earnings per share of $1.48. For 1963-1964, $1.70 per share seems to be a conservative earnings projection.

Canadian Hydrocarbons is also a wholesaler of propane. This factor and its increasing importance to the Company's operations has also tended to reduce the price received per gallon of propane but has added to overall profitability. It also provides a measure of stability and year around supply in propane marketing.

Some of the earlier problems of the Company were related to excessive merchandise inventory. A suitable balance of merchandise inventory to estimated gas appliance sales developed from 1958 onwards. Standard inventory is purchased from relatively few major appliance manufacturers so that the maximum advantage of bulk commodity purchasing and spare part replacement is obtained. Most of the retail outlets of the Company carry a few representative samples of the type of appliances which are available plus complete cataloguing.

Canadian Hydrocarbons is basically a marketing organization and as such success depends on the maintenance of tight operating budgets and a head office staff working in harmony with an enthusiastic but geographically widespread organization. The managers of the various sales outlets are really in business for themselves, their incomes derived from salary plus incentive payments. How this works out in practice was brought home forcibly to the writer in a discussion with one such manager whose plant is operating in an area described in the hearings before the National

Energy Board as 'a saturated LPG market'. This particular outlet's sales and customers were up 30% at year end March 31st, 1963, as compared to the preceding year.

Last year Canadian Hydrocarbons introduced a meter programme which in conjunction with merchandising programmes lead to a rate of increase in the installation of new bulk tanks 50% greater than the preceding year. The net increase in bulk installations was 3,183 compared to 2,918 the previous year. Natural gas installations in the smaller towns and villages are likely to continue to be the primary factor governing loss of propane customers. This loss, however, is being offset by sales to new customers. In fiscal 1963 for example, 2,200 bulk tanks were returned but this was offset by 5,383 new bulk installations.

GAS PROCESSING

In 1961 Canadian Hydrocarbons purchased Progas Limited and Stewart Petroleums. Stewart, a propane distributor in the Edmonton area, has since been merged with Canadian Propane Consolidated. Progas operates a gas processing plant in the Acheson Field near Edmonton and, through a subsidiary, operates a pipeline gathering system in that field. Canadian Hydrocarbons at a cost of about $200,000 undertook to increase the efficiency and capacity of the Progas plant and gathering system from a capacity of 1,000 MMcf. to approximately 3,250 MMcf. gas per annum. Arrangements were made to process 2,400 MMcf. per annum and for that purpose contracts were signed for the purchase of an increased supply of gas from Standard Oil of California and for the sale of corresponding increased quantities of residue gas to Northwestern Utilities Company in Edmonton, Alberta. Historical production at this plant had been as follows:

	1956	*1957*	*1958*	*1959*	*1960*
MMcf.	990.4	945.5	706.5	870.9	718.6

In the year ended March 31st, 1962 the Acheson plant processed 1,289 MMcf. of natural gas with every expectation of increasing this production in the year ending March 31, 1963 into the current year. A further $250,000 expansion was undertaken in the summer of 1962. Technical problems, however, developed in November and again in February in the 1962-63 winter so that maximum economies were not achieved. Management is confident that the problem can be solved shortly and looks forward to a higher rate of profitability in the 1963-64 winter.

Hydrocarbons Pipeline Limited, a non-operating subsidiary, is intended to engage in the transportation of liquid petroleum products. Subject to necessary approvals from government authorities, its purpose is to gather product in central Alberta for underground storage at Hughenden. Excess liquid products would be exported by Interprovincial Pipeline at Hardesty, 18 miles from Hughenden. Approval for Hydrocarbons Pipelines Limited could lead to drastically improved economies within the Province of Alberta, for the reduction in transportation costs is estimated upwards of 80%.

HOW CANADIAN HYDROCARBONS COMPARES WITH U.S. PROPANE COMPANIES

CANADIAN HYDROCARBONS LIMITED

	Sales ($ Mill.)	*Pre-Tax Profit ($ Mill.)*	*Pre-Tax Margin (%)*	*Net Income ($ Mill.)*	*Per Share Earnings*	*Dividend Per Share*	*Average Price*	*P/E Ratio*
Mar. 31, 1963	10.412	1.092	10.5%	1.134	1.48	.20	16¼	11.0
Mar. 31, 1962	9.472	.940	9.9%	0.871	1.16	.20	13⅞	11.9
Dec. 31, 1960	7.330	.764	10.4%	0.632	.90	.20	9⅞	10.9
Dec. 31, 1959	7.111	.966	13.6%	0.691	.99	—	10	10.1
Dec. 31, 1958	7.156	.460	6.4%	0.250	.35	—	7⅛	20.5
Dec. 31, 1957	8.075	.552	6.8%	0.273	.47	—	11	23.5

NATIONAL PROPANE CORP.

	Sales ($ Mill.)	*Pre-Tax Profit ($ Mill.)*	*Pre-Tax Margin (%)*	*Net Income ($ Mill.)*	*Per Share Earnings*	*Dividend Per Share*	*Average Price*	*P/E Ratio*
1962	20.6	2.2	11%	1.2	1.17	5% Stock	12	10:1
1961	19.9	1.6	8%	.9	1.00	5% Stock	22	22:1
*1960	8.9	.9	10%	.5	.56	5% Stock	16	N.A.
1959	18.3	1.7	9%	.9	1.00	5% Stock	15	15:1
1958	13.2	1.5	11%	.8	.85	5% Stock	11	13:1
1957	11.9	1.6	13%	.8	.91	Nil	N.A.	N.A.

* Only 5 month (Fiscal Year Changed).

PETROLANE GAS SERVICE, INC.

	Sales ($ Mill.)	*Pre-Tax Profit ($ Mill.)*	*Pre-Tax Margin (%)*	*Net Income ($ Mill.)*	*Per Share Earnings*	*Dividend Per Share*	*Average Price*	*P/E Ratio*
1962	25.9	3.8	15%	2.1	1.29	.48	27	21:1
1961	19.0	2.8	15%	1.6	1.02	.44	32	31:1
1960	17.4	2.5	14%	1.5	.92	.33	32	35:1
1959	16.1	2.0	12%	1.2	.75	.32	31	41:1
1958	11.0	1.5	14%	.9	.55	.29	22	40:1
1957	9.7	1.4	14%	.8	.47	.26	N.A.	N.A.

SUBURBAN GAS

	Sales ($ Mill.)	*Pre-Tax Profit ($ Mill.)*	*Pre-Tax Margin (%)*	*Net Income ($ Mill.)*	*Per Share Earnings*	*Dividend Per Share*	*Average Price*	*P/E Ratio*
1962	21.2	3.9	18%	2.3	.88	.50	31	35:1
1961	19.3	3.3	17%	2.0	.75	.41	16	21:1
1960	15.3	2.9	19%	1.8	.72	.31	8	11:1
1959	11.4	1.8	16%	1.1	.43	.26	9	21:1
1958	8.4	1.5	18%	.9	.40	.20	6	15:1
1957	6.7	1.2	18%	.7	.31	.16	3	10:1

SUBURBAN PROPANE GAS CORP.

	Sales ($ Mill.)	*Pre-Tax Profit ($ Mill.)*	*Pre-Tax Margin (%)*	*Net Income ($ Mill.)*	*Per Share Earnings*	*Dividend Per Share*	*Average Price*	*P/E Ratio*
1962	52.7	6.4	12.2%	3.2	2.02	1.24	25	13:1
1961	48.2	5.5	11%	2.9	1.81	1.12	27	15:1
1960	43.2	5.2	12%	2.6	1.68	1.00	17	10:1
1959	43.8	4.2	10%	2.1	1.41	1.00	17	12:1
1958	8.4	1.5	18%	.9	.40	.20	6	15:1
1957	39.7	4.7	12%	2.4	1.59	1.15	16	10:1

The comparable points which might be observed are as follows:

$ Sales — The effects of (a) retarded market expansion of Canadian Hydrocarbons as compared to its U.S. counterparts in the years when economic propane supply was unavailable in Western Canada at peak load, (b) a declining price per gallon sold, as refinery product prices fell and (c) loss of markets to natural gas in 1958-1959, is evident.

Pre-Tax Profit $ — The comparison suggests slightly better than average performance for Canadian Hydrocarbons — the rate of improvement is less than Suburban Gas and Petrolane but better than National Propane and Suburban Propane.

Pre-Tax Margin % — Not as favourable as Suburban Gas or Petrolane, but on a par with National and Suburban Propane.

Net Income — In this area Canadian Hydrocarbons compares favourably with all the others. Realistically 1957 and 1958 should perhaps be excluded, for in those years the Company was not operating with anything like the efficiencies which it has obtained since. Since 1958, dollar sales increased 47½% for an 135% increase in pre-tax profit.

Per Share Earnings — Canadian Hydrocarbons compares favourably in growth in net per share earnings with the best of the other companies.

Average of P/E Ratio of Stock in Marketplace — It would seem that Canadian Hydrocarbons has been a relatively undervalued overlooked situation for some time.

Dividend Policy — Canadian Hydrocarbons does not have as constructive a record as compared to other investment situations in the industry. Emphasis on re-investment in plant, equipment and purchase of minority and other interests has precluded the Company from developing a more generous policy. The Company is likely to review this policy in the near future.

SELECTED STATISTICS

	Mar. 31, 1963	*Mar. 31, 1962*	*Dec. 31, 1960*	*Dec. 31, 1959*	*Dec. 31, 1958*	*Dec. 31, 1957*
Working capital	$ 3,068,024	$ 2,158,109	$1,425,080	$2,012,558	$1,351,672	$ (469,697)
Working capital ratio	2.9 to 1	2.2 to 1	2.3 to 1	2.9 to 1	1.9 to 1	.9 to 1
Long term debt	$ 5,737,048	$ 3,609,900	$2,028,000	$2,292,000	$2,535,000	$1,746,616
Minority interest	$ Nil	$ Nil	$ 290,461	$ 715,172	$ 717,014	$ 676,806
Shareholders' equity	$ 9,274,485	$ 8,199,401	$6,866,370	$6,414,339	$5,826,645	$4,865,549
Number of shares outstanding *	762,065	754,096	700,000	700,000	700,000	580,000
Shareholders' equity per share	$ 12.17	$ 10.87	$ 9.81	$ 9.16	$ 8.32	$ 8.39
Net profit per share	$ 1.48	$ 1.16	$ .90	$ .99	$ .36	$ .47
Cash flow (net profits + non cash expense — non cash income)	$ 1,875,572	$ 1,577,165	$ 951,638	$1,092,269	$ 655,534	$ 953,469
Purchase of fixed assets (net)	$ 2,943,078	$ 2,299,409	$ 612,556	$ 407,342	$ 455,559	$ 111,895
Cash flow per share	$ 2.46	$ 2.09	$ 1.36	$ 1.56	$ .95	$ 1.64
Interest coverage before depreciation	8.3	10.2	11.5	11.7	6.6	5.7
Interest coverage after depreciation	5.0	6.2	6.8	7.6	3.4	3.2
Percentage of cash flow to Shareholders' equity	20.2%	19.2%	13.8%	17.0%	11.2%	19.6%
Fixed assets including excess cost of shares of subsidiaries	$12,105,298	$10,043,574	$8,233,088	$8,283,128	$8,471,869	$8,554,217
Propane sales	$ 6,674,612	$ 6,157,192	$4,836,400	$4,969,771	$5,035,693	$5,769,572
Merchandise sales	$ 2,982,902	$ 2,670,567	$2,314,721	$1,971,542	$2,011,202	$2,225,508
Propane gallonage sales	39,210,201	35,424,893	25,438,897	23,850,000	21,918,506	25,353,796

* OPTIONS OUTSTANDING

34,000 granted to officers at prices ranging from $6.4125 to $9.78 per share to be exercised on various dates to February 9, 1968.

6,750 under an Employee Stock Option Plan. Options to purchase 3,150 shares under this Plan have been granted ranging from $7.52 to $13.34 per share on various dates to December 31, 1968.

CURRENT POSITION

In the year ended March 31, 1963, propane sales increased 10.9% for a dollar revenue increase of the same percentage. Pre-tax earnings increased 16% from $939,846 to $1,092,194. Net earnings after tax adjustments increased 30% from $871,818 to $1,133,857.

These results were less than anticipated. In the quarter ended Dec. 31, 1962 net earnings totalled $453,479, .60 per share as against $500,270, .68 per share in the comparable 1961 period. Sales in the quarter were down over 5%. An exceptionally mild 1962 autumn and early winter contributed to the results. "Degree-day" data for Edmonton, Alberta for example, recorded 9,816 "degree-days" in 1962 compared to 9,901 in 1961 and a 30 year average or normal of 10,320 "degree-days". In other words, in some important marketing areas in the Canadian West, "degree-days" were 5% below normal. (A "degree-day" represents each degree that the outdoor mean temperature on any day is below 65° F.)

Despite the set-back, excellent operating conditions during the quarter ended March 31, 1963 enabled Canadian Hydrocarbons to show earnings of $1.48 per share for the year ended March 31, 1963 as compared to $1.16 per share for the 12 month period ended March 31, 1962.

Given average weather conditions in the 1963-1964 winter, a full operating season for the Acheson plant, and further market penetration assisted by the Pacific Petroleums pipe line across the Prairies (which is likely to ensure less-expensive product in volume) it is estimated that earnings for the year ended March 31, 1964 could exceed $1.70 per share.

DEPRECIATION AND TAXATION

Canadian Hydrocarbons claims maximum capital cost allowance permitted under the Income Tax Act in order to minimize corporation taxation as much as possible. Since the Company is in a major growth phase, a phase which requires a re-investment of earnings in the equity of the enterprise to provide an adequate base for expansion, this policy seems entirely justified. The effect of the policy in the year ended March 31, 1963 was to eliminate income taxes otherwise payable for that year in the amount of $498,000, creating a loss for income tax purposes. In fact a recovery of income taxes paid in 1962 is to be made of $44,663, 5½¢ per share.

This practice is wholly consistent with companies whose rate of growth and rate of return on invested capital will support what is usually referred to as a future tax liability. Cash retained in Canadian Hydrocarbons can be put to work at a rate of return of 20.2% (19.2% in 1962), a rate compounded which should more than offset any future tax disadvantage.

Canadian Hydrocarbons, like many corporations which claim maximum capital cost allowance (Dominion Foundries & Steel, Northern Ontario Natural Gas, Consumers' Gas) is faced with a technical accounting problem in this area. Some companies set up a reserve for future taxes payable on the liability side of the balance sheet; others simply draw attention to the policy established. Canadian Hydrocarbons points out that the net book value of depreciable fixed assets at March 31, 1963 ($9,780,959) is $3,019,000 in excess of the amount upon which depreciation will be allowed for income tax purposes in the future.

CONTROL

The largest single block of Canadian Hydrocarbons stock, approximately 270,000 shares, or 35%, is held by Consolidated Toronto Development Corporation Limited, a subsidiary of Great Northern Capital Company Ltd. Great Northern is a holding company having substantial or outright principal investment positions in public utilities, propane distributors, real estate operations and a major finance company. The two largest shareholders in Great Northern are Elican Development Company Limited, a Montreal investment trust and Williams Bros. Company, a company engaged in the engineering design and construction of pipe lines and other related activities on an international scale for many years. Both Elican and Williams Bros. have had a substantial interest in Canadian Hydrocarbons for some years.

MARKET

The chart indicates that the stock is in a major uptrend. The outstanding characteristic of its trading pattern is a tendency to consolidate in a regular rectangular formation before each burst of market strength (1958-1959), autumn 1961, winter of 1962 and spring of 1963. Recently, demand for the shares drove the price to a new high of 19½, reacted to 16½-17 to test the breakout, and now is in an ideal position to work into the lower twenties. The stock seems to be thin from time to time, for its 2,251 shareholders tend to be long term investors rather than short term traders.

SUMMARY

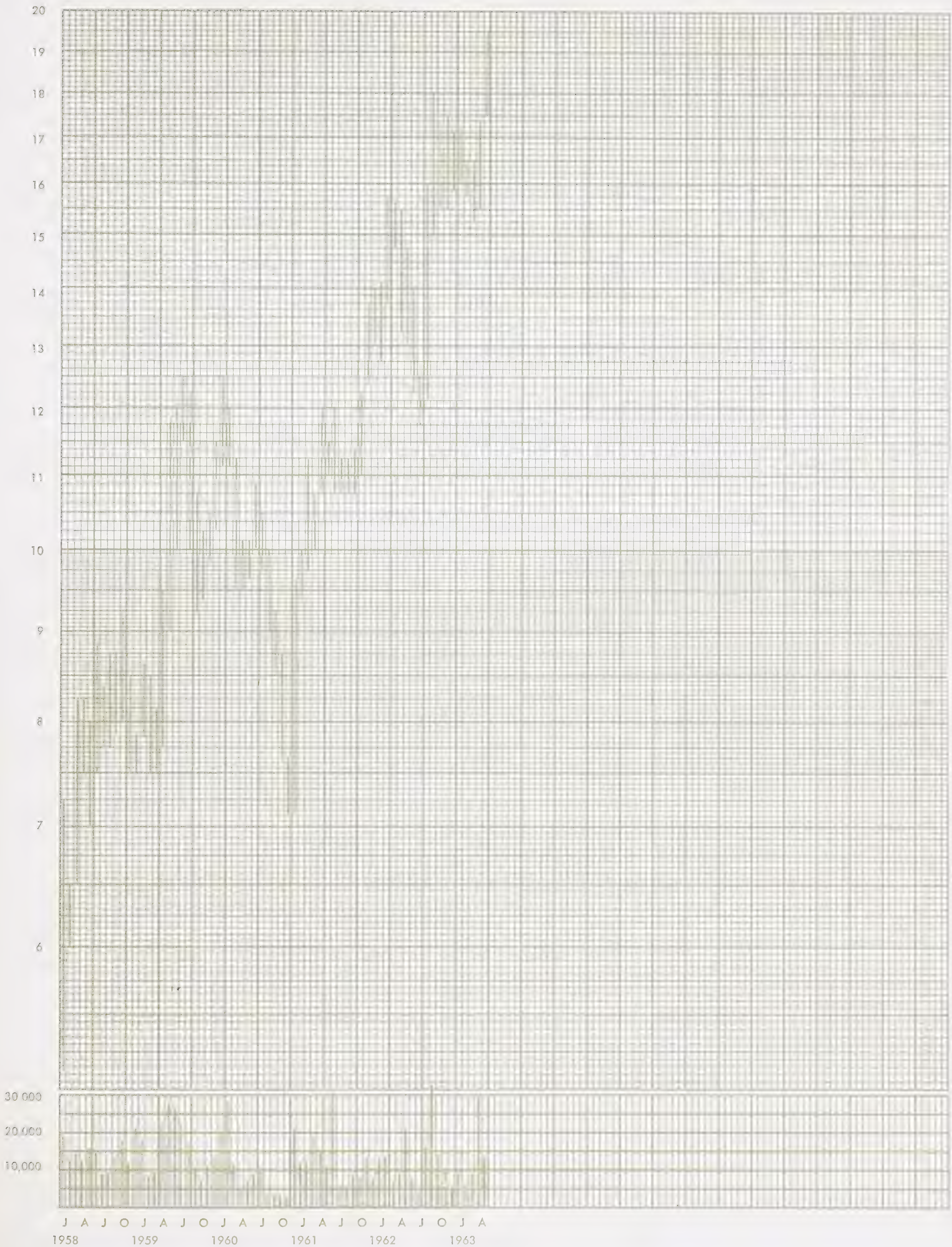
1. The Canadian propane industry is in its infancy. A variety of factors has inhibited its growth, but now, with over production of product, and continuously improving methods of transportation, a clear uptrend is indicated.

2. Canadian Hydrocarbons common stock offers a unique method of investment in a Canadian growth industry. From rather uncertain beginnings it has developed into a comprehensible corporate structure with a management team alert to opportunities.

3. At 17, Canadian Hydrocarbons sells at 11.5 times 1962-1963's earnings and 10.0 times 1963-1964 projected earnings. These are unusually low multiples compared to similar operations in the United States and our own general market.

4. Projected earnings for the year ending March 31, 1964 suggest earnings which would support a price range on the common shares of between $25-$30 in the year ahead.

R. C. Stone, June, 1963.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CANADIAN HYDROCARBONS LIMITED

BY-LAW NO. 19

being a By-law increasing the authorized capital of the Company and authorizing the application for Supplementary Letters Patent.

WHEREAS the authorized capital of the Company consists of three million five hundred thousand (3,500,000) shares of no par value, of which seven hundred and ninety-three thousand, three hundred and forty (793,340) shares are issued and are outstanding and are fully paid; and

WHEREAS it is deemed necessary and expedient in the interest of the Company that supplementary letters patent be issued confirming this By-law increasing the authorized capital of the Company as herein provided.

NOW THEREFORE BE IT ENACTED AND IT IS HEREBY ENACTED as By-law No. 19 of CANADIAN HYDROCARBONS LIMITED (herein called the "Company") that:

1. Subject to confirmation by supplementary letters patent, the authorized capital of the Company be increased by the creation of two hundred and fifty thousand (250,000) preferred shares of the par value of twenty ($20.00) dollars each (hereinafter collectively referred to as the "preferred shares") and the existing shares of the capital of the Company be designated as common shares.

2. The preferred shares shall as a class carry and be subject to the preferences, priorities, rights, restrictions, conditions and limitations hereinafter set forth in sub-paragraphs (a) to (i) of paragraph 4 hereof.

Reference herein to any class or series of shares ranking on a parity with another class or series of shares shall mean ranking on a parity with respect to payment of dividends and distribution of assets in the event of liquidation, dissolution or winding up of the Company, whether voluntary or involuntary, to the extent of their respective rights in that connection. The authorized amount of preferred shares may from time to time be increased as herein provided and such increased authorized amount may be issued in one or more series and the provisions of sub-paragraphs (a) to (i) of paragraph 4 hereof shall mutatis mutandis apply to such increased authorized amount.

3. (a) The directors of the Company may at any time and from time to time issue the preferred shares in one (1) or more series, each series to consist of such number of shares as may, before issuance thereof, be determined by the directors. The number of shares in any series may from time to time be increased by the directors upon compliance with the same conditions as are applicable to the issue of shares in a new series.

(b) The directors of the Company may (subject as hereinafter provided) by resolution from time to time fix before issuance the descriptive designation and the special rights, restrictions, conditions and limitations attached to the preferred shares of each series including, without limiting the generality of the foregoing, the rate of preferential dividends, the dates of payment thereof, the redemption price and terms and conditions of redemption, and conversion rights (if any) and any preferred share purchase fund, rights of purchase of preferred shares by the Company or other provisions or limitations attaching to the preferred shares of such series, the whole subject to the provisions of paragraph 4 and also subject to the issue of supplementary letters patent confirming such resolution setting forth the designation, rights, restrictions, conditions and limitations attached to the preferred shares of such series.

4. All of the preferred shares shall, notwithstanding the provisions of the immediately preceding paragraph hereof, as a class, carry and be subject to the preferences, priorities, rights, limitations, conditions and restrictions hereinafter set forth in sub-paragraphs (a) to (i) of this paragraph 4.

(a) The preferred shares of each series shall rank on a parity with the preferred shares of every other series unless the resolution of the directors of the Company and supplementary letters patent aforesaid establishing any particular series shall expressly provide that such series shall be subordinate in any respect therein specified to any prior series of preferred shares theretofore issued and outstanding; provided, however, that when any fixed cumulative dividends or amounts payable on a return of capital are not paid in full in accordance with the respective terms of each series, the preferred shares of all series shall rank on a parity and shall participate rateably in respect of such dividends including all unpaid cumulative dividends (which for such purpose shall be calculated as if the same were accruing from day to day for the period from the expiration of the last period for which dividends shall have been paid up to and including the date of distribution) in accordance with the sums which would be payable on said shares if all such dividends were declared and paid in full in accordance with their respective terms, and on any return of capital in accordance with the sums which would be payable on such return of capital if all such sums so payable were paid in full in accordance with their respective terms; and provided further that in the event there shall be insufficient assets to satisfy in full all such claims as aforesaid then the claims of the holders of said preferred shares with respect to return of capital shall be paid and satisfied and any assets remaining thereafter shall be applied towards the payment and satisfaction of claims in respect of dividends as aforesaid.

(b) The preferred shares shall be entitled to preference over the common shares of the Company and any other shares of the Company ranking junior to the said preferred shares with respect to payment of dividends and distribution of assets in the event of liquidation, dissolution or winding up of the Company, whether voluntary or involuntary, to the extent fixed in the case of each respective series, and may also be given such other preference over the common shares of the Company and any other shares of the Company ranking junior to the said preferred shares as may be fixed in the case of each such series.

(c) Subject to the provisions of section 61 of the Companies Act and to the provisions relating to any particular series theretofore issued and to the other provisions of this paragraph 4, preferred shares of any series may be made subject to redemption and, or in the alternative, to purchase by the Company at such times and at such prices, not being in excess of one hundred and eight percent (108%) of the par value thereof plus an amount equal to all unpaid accumulated dividends thereon (which for such purpose shall be calculated as if such dividends were accruing from day to day for the period from the expiration of the last period for which dividends shall have been paid up to and including the date of such redemption or purchase) plus in the case of purchase an amount equal to cost of purchase, the whole upon and subject to such other terms and conditions as may be specified in the rights, restrictions, conditions and limitations attaching to the preferred shares of such series as set forth in the resolution of the board of directors of the Company and supplementary letters patent relating to such series. Preferred shares redeemed or purchased by the Company shall be cancelled and shall not be reissued.

(d) Preferred shares of any series shall not be redeemed nor shall any funds of the Company be applied in the purchase of preferred shares of any series, whether through the operation of a preferred share purchase fund or otherwise, unless at the time of such redemption or purchase all accumulated preferential dividends, if any, on all the preferred shares outstanding ranking on a parity with, or in priority to, such series of preferred shares so redeemed or purchased, shall have been declared and paid, or funds in respect thereof set apart for that purpose.

(e) The holders of the preferred shares shall not, as such, be entitled as of right to subscribe for or purchase or receive any part of any issue of shares or of bonds, debentures or other securities of the Company now or hereafter authorized.

(over)

(f) No class of shares may be created ranking as to capital or dividends prior to or on a parity with the preferred shares without the approval of the holders of the preferred shares given as hereinafter specified, nor shall any additional preferred shares be created without such approval.

(g) The holders of preferred shares shall not be entitled (except as hereinafter specifically provided) to receive notice of or attend any meeting of the shareholders of the Company and shall not be entitled to any vote at any such meeting, unless and until six (6) quarterly dividends on the preferred shares of any one series shall remain outstanding and be unpaid whether or not consecutive and whether or not such dividends have been declared and whether or not there are any monies of the Company properly applicable to the payment of dividends. Thereafter each holder of preferred shares shall be entitled to receive notice of and to attend all meetings of shareholders and shall be entitled at any and all such meetings to as many votes as he holds preferred shares and shall continue to be entitled to notice, to attend, and so to vote until such time as all arrears of dividends on all outstanding preferred shares shall have been paid whereupon the right of holders of preferred shares to receive notice of meetings, to attend, and to vote in respect of such preferred shares shall cease unless and until six (6) quarterly dividends on the preferred shares of any series shall again be in arrears and unpaid whereupon the holders of the preferred shares shall again have the right to receive notice, to attend, and to vote as above provided and so on from time to time.

If and so often as the holders of preferred shares shall become entitled to voting rights as aforesaid, they shall, notwithstanding any other provisions in that behalf in the letters patent or by-laws of the Company, so long as such voting rights subsist, at each annual general meeting of shareholders of the Company, have the exclusive right, voting separately and as a class, to elect two (2) of the members of the board of directors of the Company from among the holders of preferred shares, and the holders of other classes of shares of the Company shall have no voice in said particular election, provided always that the holders of preferred shares shall have no voice or vote in the election of the other directors of the Company. Nothing herein contained shall be deemed to limit the right of the Company from time to time to increase or decrease the number of its directors.

(h) The approval of holders of all the preferred shares as to any and all matters referred to herein or in supplementary letters patent relating to any particular series of preferred shares may be given subject always to the provisions of the Companies Act at a meeting of holders of preferred shares duly called and held upon at least fourteen (14) days' notice, at which meeting the holders of at least a majority of the outstanding preferred shares are present or represented by proxy and carried by the affirmative vote of the holders of not less than two-thirds (2/3) of the preferred shares represented and voting at such meeting cast on a poll. If at any such meeting the holders of a majority of the outstanding preferred shares are not present or represented by proxy within half an hour after the time appointed for the meeting, then the meeting shall be adjourned to such date, being not less than fourteen (14) days later, and to such time and place as may be appointed by resolution of those holders present at the meeting and at least ten (10) days' notice shall be given of such adjourned meeting, but it shall not be necessary in such notice to specify the purpose for which the meeting was originally called. At such adjourned meeting the holders of preferred shares present or represented by proxy shall constitute a quorum and may transact business for which the meeting was originally convened. Except as hereinbefore specifically provided, the formalities to be observed in respect of the giving of notice of any such meeting or adjourned meeting and the conduct thereof shall be those from time to time prescribed in the by-laws of the Company with respect to meetings of shareholders. The provisions of this sub-paragraph (h) shall apply mutatis mutandis to the approval of the holders of preferred shares of any series as to any matter requiring approval of only the holders of preferred shares of such series, provided that nothing herein contained shall preclude the convening contemporaneously of meetings of the holders of all preferred shares and the holders of any one or more series of preferred shares and the holders of other shares in the Company.

(i) The provisions of sub-paragraphs (a) to (h) hereof inclusive, and the provisions of this sub-paragraph (i) hereof may be repealed, modified, amended or amplified by supplementary letters patent but only with the approval of the holders of the preferred shares given as hereinbefore specified in addition to any other approval required by the Companies Act.

5. The Company be and is hereby authorized to make application to the Secretary of State of Canada for supplementary letters patent confirming this By-law.

6. Any two of the officers and directors of the Company be and they are hereby authorized and directed to execute and deliver all instruments and documents and to take all action necessary or desirable for carrying out the intention of this By-law.

ENACTED this 23rd day of June, A.D. 1964.

WITNESS the corporate seal of the Company.

F. T. PHILLIPS
Secretary

D. M. DEACON
President

(Corporate Seal)

AR29

CANADIAN HYDROCARBONS LIMITED

NOTICE OF THE ANNUAL AND A SPECIAL GENERAL MEETING

NOTICE IS HEREBY GIVEN that the Annual and a Special General Meeting of the Shareholders of Canadian Hydrocarbons Limited will be held at the Head Office of the Company, 250 Elveden House, Calgary, Alberta, at 11 o'clock in the forenoon (M.S.T.) on Wednesday, the 14th day of May, 1969, for the purpose of:

1. Receiving and considering the annual report of the Directors, the report of the Auditors and the Financial Statements for the year ended December 31, 1968.
2. Electing Directors for the ensuing year.
3. Appointing Auditors for the ensuing year.
4. Considering, and if thought fit sanctioning, By-law No. 26 (with such amendments or modifications thereto as the meeting may approve) being a by-law to sub-divide each common share of the Company without nominal or par value, whether issued or un-issued, into two common shares without nominal or par value and authorizing an application for Supplementary Letters Patent.
5. Considering, and if thought fit sanctioning, By-law No. 27 (with such amendments or modifications thereto as the meeting may approve) being a by-law to increase the authorized capital of the Company by the creation of additional second preferred shares and authorizing an application for Supplementary Letters Patent.
6. Transacting such other business as may properly come before the meeting.

Shareholders unable to be present at the meeting are requested to date, sign and return the attached form of Proxy to the Secretary of the Company c/o Montreal Trust Company, 522 - 8th Avenue Southwest, Calgary, Alberta, Canada.

Every holder of common shares of the Company on the date of the meeting will be entitled to attend and vote thereat either in person or by proxy and such proxy need not be a shareholder. The transfer books of the Company will not be closed.

DATED at Calgary, in the Province of Alberta, this 23rd day of April, 1969.

BY ORDER OF THE BOARD

E. W. Straus
Secretary

CANADIAN HYDROCARBONS LIMITED

INFORMATION CIRCULAR

SOLICITATION OF PROXIES

This circular is furnished in connection with the solicitation of proxies by the management of Canadian Hydrocarbons Limited, (hereinafter sometimes called the "Company") for use at the Annual and Special General Meeting of the shareholders of the Company to be held at the head office of the Company, 250 Elveden House, Calgary, Alberta, on the 14th day of May, 1969, commencing at 11:00 o'clock a.m. (M.S.T.), for the purposes set forth in the notice of meeting accompanying this information circular. Information contained herein is given as of April 18, 1969. The costs incurred in the preparation and mailing of both the proxies and this information circular will be borne by the Company.

APPOINTMENT AND REVOCATION OF PROXIES

A form of proxy is attached to the Notice of the Annual and Special General Meeting which accompanies this Information Circular. The persons named in such form of proxy are directors of the Company. Any person or company giving a proxy will have the power to revoke such proxy at any time prior to the meeting. Attendance at the meeting in person by any shareholder will be treated as revocation of any proxy previously given by him.

All properly executed proxies of shareholders received by Montreal Trust Company, Registrar and Transfer Agent for the Company, prior to the time of the meeting on May 14th, 1969, will be voted at the meeting, and, if a choice is specified with respect to any matters to be acted upon, will be voted in accordance with the instructions contained therein.

The person or company submitting the proxy shall have the right to appoint a person to represent him or it at the meeting other than the person or persons designated in the form of proxy furnished by the Company. Such appointment may be exercised by the striking out of the names of persons so designated and inserting the name of the appointed representative in the blank space provided, such deletion to be initialled by the person or officer signing the proxy.

EXERCISE OF DISCRETION BY PROXIES

A proxy in favour of the persons designated by management of the Company will confer discretionary authority on the persons appointed with respect to:

(a) amendments or variations to matters identified in the said notice of meeting, or

(b) other matters which may properly come before the meeting.

Management of the Company is not aware of any such amendments, variations or other matters to be presented for action at the meeting.

VOTING SHARES AND PRINCIPAL HOLDERS THEREOF

There are presently issued and outstanding 2,146,666 common shares of the Company. The registered holders of common shares of the Company, at the time of the meeting, are entitled to attend and to vote thereat on the basis of one vote for each such share held. The register of transfers will not be closed.

Elwill Development Limited, with principal office at Montreal, Quebec, is the beneficial owner of 1,313,628 common shares of the Company, representing approximately 61% of the issued and outstanding common shares of the Company.

ELECTION OF DIRECTORS

The term of office for each director is from the date of the meeting at which he is elected until the annual meeting next following or until his successor is elected or appointed. At the Annual and Special General Meeting a board of thirteen (13) directors is to be elected and it is the intention of the persons named in the enclosed form of proxy to vote such proxies for the election of the following persons as directors of the Company, the interest of such nominee in securities of the Company being as disclosed below:

Name	Principal Occupation	Year first became director	Common shares beneficially owned directly or indirectly
Fernand E. Chenu	Executive, Electrorail S.A. (industrial holding company) Brussels, Belgium	1966	10
Michael Dennis	Solicitor, associate in the firm Smith, Davis, Anglin, Laing, Weldon & Courtois (Barristers and Solicitors) Montreal, Canada		10
Marc H. Dhavernas	President, United North American Holdings Limited (investment holding company) Montreal, Canada	1967	10
D. Terence Dingle	Solicitor, associate in the firm Smith, Davis, Anglin, Laing, Weldon & Courtois (Barristers and Solicitors) Montreal, Canada		10
Michael H. Finnell	Vice-President, Canadian Hydrocarbons Limited, Calgary, Canada	1967	13,011
J. Howard Kelly, Q.C.	Solicitor, self-employed, Calgary, Canada	1959	50
Dr. Fritz Morschbach	Chief Executive Officer, Elektrische Licht und Kraftanlagen A.G. (industrial holding company) Cologne, Germany	1967	10
Dr. Courtnay Pitt	Partner in the firm Baker, Weeks & Co. (Stock Brokers), offices in New York, Philadelphia, Montreal, Toronto and elsewhere	1956	200
Raymond A. Rich (Chairman of the Board of Directors of the Company)	Executive, New York City, U.S.A. (chairman and chief executive positions various industrial corporations in United States of America and Canada)	1958	760
George C. Solomon	President, Western Tractor Ltd., Regina, Canada (distributors of industrial equipment and road machinery)	1962	200
J. Grant Spratt	Petroleum Consultant, self-employed, Calgary, Canada	1964	200
Michael J. Walton	Chartered Accountant, a partner in the firm of Gunderson, Stokes, Walton & Co., Vancouver, Canada	1967	20
David R. Williams, Jr.	Chairman of Executive Committee, Williams Brothers Company (engineering, construction and pipe line operation), offices in Tulsa, Calgary, and elsewhere	1958	200

NOTES:

(a) All nominees have held the principal occupations indicated for the last five years or more, with the following exceptions:

(i) D. Terence Dingle, prior to November 2, 1964, was an associate of the firm O'Brien, Home, Hall and Nolan (Barristers and Solicitors).

(ii) Mr. M. H. Finnell, prior to November 1, 1965 was Vice-President and a director of Triad Oil Co. Ltd., a corporation engaged in petroleum exploration and development and since October 13, 1966 has been a Vice-President of Elwill Development Limited.

(b) Mr. D. R. Williams, Jr. is an associate of Williams Brothers Company, which company holds 46% of the voting shares of Elwill Development Limited.

(c) Mr. Michael J. Walton beneficially owns directly or indirectly 83,080 common shares, being 2.5% of the voting shares of Fort St. John Petroleums Ltd., and 10,600 common shares, being .4% of the voting shares of Vancouver Island Gas Company Ltd., both subsidiaries of the Company.

REMUNERATION OF MANAGEMENT AND OTHERS

The aggregate direct remuneration paid or payable by the Company and its subsidiaries whose financial statements are consolidated with those of the Company, to the Directors and Senior Officers of the Company during the fiscal year ending December 31, 1968 was $185,508.00.

The estimated aggregate cost to the Company and its subsidiaries during the aforesaid calendar year of all pension benefits proposed to be paid under any normal pension plan in the event of retirement at normal retirement age, directly or indirectly by the Company or any of its subsidiaries to the Directors and Senior Officers of the Company was $225.00.

The following are particulars of options to purchase common shares of the Company, granted to or exercised by Senior Officers of the Company from January 1, 1968 to April 18, 1969:

Options Granted:

Common Shares	Option Price	Date of Granting	Price range 30 days preceding granting
2,600	$10.25	Feb. 8 1968	10⅛ - 12⅝

These options are exercisable as to 25% in each year commencing one year from the date of granting, are cumulative and expire 5 years after granting.

2,000	10.25	Feb. 8 1968	10⅛ - 12⅝

These options are exercisable in whole from the date of granting, and expire 5 years after granting.

Options Exercised:

Common Shares	Option Price	Date of Exercise	Price range 30 days preceding exercise
837	10.50	March 12 1968	10⅛ - 11
837	10.50	April 26 1968	9⅜ - 12⅞
300	9.895	June 13 1968	12¼ - 18¾
100	10.50	June 18 1968	13¼ - 18¾
100	12.00	June 21 1968	13¼ - 19⅛
575	10.50	June 25 1968	14 - 20
250	12.00	July 9 1968	17⅛ - 21⅝
750	13.88	July 9 1968	17⅛ - 21⅝
100	12.00	July 26 1968	18¾ - 21⅝
250	12.00	Sept. 24 1968	18¼ - 24¾
500	10.25	Feb. 10 1969	23½ - 28⅜
2,000	10.25	Feb. 11 1969	23½ - 28⅜
500	12.00	Feb. 11 1969	23½ - 28⅜
837	10.50	April 14 1969	24⅝ - 30½

In January 1969, the provisions of an option agreement granted prior to 1968, affecting 500 common shares, were amended to provide that the options may be exercised immediately rather than as to 25% in each year on a cumulative basis.

Since the beginning of the last completed financial year, the Company advanced an aggregate amount of $540,250.00 to directors and senior officers for the purpose of purchasing shares of the Company and of Canadian Homestead Oils Limited. All advances are repayable on the expiration of five years from their effective dates without interest and are secured by pledge of the securities purchased and by promissory notes.

AUDITORS

The persons named in the proxy forms solicited by management of the Company will vote shares represented by such proxies, if not expressly directed to the contrary in such proxy, for reappointment of the firm of Clarkson, Gordon & Co., Calgary, Alberta, as auditors of the Company to hold office until the next annual meeting of shareholders. Clarkson, Gordon & Co. have been auditors for the Company for a period in excess of five (5) years.

PARTICULARS OF MATTERS TO BE ACTED UPON:

(a) By-law No. 26 is a by-law to sub-divide each common share of the Company without nominal or par value, whether issued or unissued, into two common shares without nominal or par value and authorizing an application for Supplementary Letters Patent. By-law No. 26 is set out in full as Schedule "A" to this information circular.

(b) By-law No. 27 is a by-law to increase the authorized capital of the Company by the creation of 3,700,000 additional Second Preferred shares of the par value of $25.00 each and authorizing an application for Supplementary Letters Patent. By-law No. 27 is set out in full as Schedule "B" to this information circular.

By Order of The Board of Directors

Dated April 18, 1969.

E. W. Straus, Secretary

CANADIAN HYDROCARBONS LIMITED

BY-LAW No. 26

being a By-law to subdivide each common share of the Company without nominal or par value, whether issued or unissued, into two (2) common shares without nominal or par value and authorizing an application for Supplementary Letters Patent.

WHEREAS the authorized capital of Canadian Hydrocarbons Limited (hereinafter called "the Company") now consists of:

(a) two hundred and fifty thousand (250,000) first preferred shares of the par value of twenty ($20.00) dollars each, issuable in one or more series, all of which have been designated "5½% Cumulative Redeemable First Preferred Shares, Series A", of which two hundred and forty thousand, two hundred and fifty (240,250) shares have been issued as fully paid and non-assessable, of which there are presently outstanding, after redemption, two hundred and twenty-two thousand, two hundred and five (222,205) shares; and

(b) three hundred thousand (300,000) second preferred shares of the par value of twenty-five ($25.00) dollars each, issuable in one or more series, of which two hundred and sixty thousand (260,000) shares have been designated "6% Cumulative Redeemable Participating Second Preferred Shares, Series A", all of which have been issued as fully paid and non-assessable and are presently outstanding; and

(c) seven million (7,000,000) common shares without nominal or par value provided, however, that the aggregate consideration for the issue of the said seven million (7,000,000) shares without nominal or par value shall not exceed in amount or value the sum of twenty-five million ($25,000,000) dollars or such greater amount as the Board of Directors of the Company may deem expedient and as may be authorized by the Minister of Consumer and Corporate Affairs on payment of the requisite fees applicable to such greater amount, of which two million, one hundred and thirty-five thousand, two hundred and seventy-nine (2,135,279) shares have been issued and are outstanding as fully paid and non-assessable; and

WHEREAS it is considered desirable to alter the share capital of the Company as hereinafter provided:

NOW THEREFORE BE IT ENACTED AND IT IS HEREBY ENACTED as a By-law of the Company, as follows:

1. Subject to confirmation by Supplementary Letters Patent, the capital of the Company be altered by subdividing each common share without nominal or par value of the Company, whether issued or unissued, into two (2) common shares without nominal or par value so that the authorized common shares of the capital of the Company shall consist of fourteen million (14,000,000) common shares without nominal or par value, of which four million, two hundred and seventy thousand, five hundred and fifty-eight (4,270,558) shares shall be outstanding as fully paid and non-assessable provided, however, that the aggregate consideration for the issue of the said fourteen million (14,000,000) common shares without nominal or par value shall not exceed in amount or value the sum of twenty-five million ($25,000,000) dollars or such greater amount as the Board of Directors of the Company may deem expedient and as may be authorized by the Minister of Consumer and Corporate Affairs on payment of the requisite fees applicable to such greater amount.

2. From and after the date of the Supplementary Letters Patent hereby authorized to be applied for, each registered holder of existing common shares without nominal or par value shall be and be deemed to be the holder of and entitled by such holder's share certificate therefor to two (2) fully paid and non-assessable common shares without nominal or par value for each existing share with respect to which such shareholder is then so registered, and promptly after the date of said Supplementary Letters Patent, to effect such subdivision, each such shareholder of record on a date to be fixed by the Directors shall be entitled to receive an additional certificate in respect of one-half of the number of common shares without nominal or par value as he is so deemed to hold on said record date and the existing certificate or certificates from and after said record date shall evidence the other one-half of the said common shares that each such shareholder is so deemed to hold on said record date.

3. Upon this By-law having been sanctioned by the shareholders of the Company, an application to the Minister of Consumer and Corporate Affairs for the issuance of Supplementary Letters Patent confirming this By-law be and the same is hereby authorized.

4. The Directors and/or proper officers of the Company be and they are hereby authorized and directed, on behalf of the Company, to sign and execute all documents and to do all things necessary or advisable in connection with the foregoing.

ENACTED this 18th day of March, A.D. 1969.

WITNESS the corporate seal of the Company.

"E. W. STRAUS" Secretary	C/S	"R. A. RICH" President

CANADIAN HYDROCARBONS LIMITED

BY-LAW No. 27

being a By-law to increase the authorized capital of the Company by the creation of additional second preferred shares and authorizing an application for Supplementary Letters Patent.

WHEREAS the authorized capital of Canadian Hydrocarbons Limited (hereinafter called "the Company") now consists of:

(a) two hundred and fifty thousand (250,000) first preferred shares of the par value of twenty ($20.00) dollars each, issuable in one or more series, all of which have been designated "5½% Cumulative Redeemable First Preferred Shares, Series A", of which two hundred and forty thousand, two hundred and fifty (240,250) shares have been issued as fully paid and non-assessable, of which there are presently outstanding, after redemption, two hundred and twenty-two thousand, two hundred and five (222,205) shares; and

(b) three hundred thousand (300,000) second preferred shares of the par value of twenty-five ($25.00) dollars each, issuable in one or more series, of which two hundred and sixty thousand (260,000) shares have been designated "6% Cumulative Redeemable Participating Second Preferred Shares, Series A", all of which have been issued as fully paid and non-assessable and are presently outstanding; and

(c) seven million (7,000,000) common shares without nominal or par value provided, however, that the aggregate consideration for the issue of the said seven million (7,000,000) shares without nominal or par value shall not exceed in amount or value the sum of twenty-five million ($25,000,000) dollars or such greater amount as the Board of Directors of the Company may deem expedient and as may be authorized by the Minister of Consumer and Corporate Affairs on payment of the requisite fees applicable to such greater amount, of which two million, one hundred and forty-six thousand, six hundred and sixty-six (2,146,666) shares have been issued and are outstanding as fully paid and non-assessable; and

WHEREAS it is considered desirable to alter the share capital of the Company as hereinafter provided:

NOW THEREFORE BE IT ENACTED AND IT IS HEREBY ENACTED as a By-law of the Company, as follows:

1. Subject to confirmation by Supplementary Letters Patent, the authorized capital of the Company be increased by the creation of three million, seven hundred thousand (3,700,000) additional Second Preferred shares of the par value of twenty-five ($25.00) dollars each, ranking pari passu in all respects with the existing three hundred thousand (300,000) second preferred shares.

2. Upon this By-law having been sanctioned by the shareholders of the Company, an application to the Minister of Consumer and Corporate Affairs for the issuance of Supplementary Letters Patent confirming this By-law be and the same is hereby authorized.

3. The Directors and/or proper officers of the Company be and they are hereby authorized and directed, on behalf of the Company, to sign and execute all documents and to do all things necessary or advisable in connection with the foregoing.

ENACTED this 17th day of April, A.D. 1969.

WITNESS the corporate seal of the Company.

"E. W. STRAUS" Secretary	C/S	"R. A. RICH" President

Printed in Canada

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INTERIM REPORT FOR THE SIX MONTHS ENDED JUNE 30, 1968

CANADIAN HYDROCARBONS LIMITED

ALCRAFT • CALGARY

TO THE SHAREHOLDERS

Gross revenues of Canadian Hydrocarbons for the six months ended June 30, 1968 increased by 9.2% to $17,171,518 from $15,722,655 last year. Cash flow from operations improved by 10½% and was equivalent to $1.54 per common share. Net earnings were $2,051,099 (81c per common share) compared to $1,921,989 (79c per common share) last year.

The Company has recently renegotiated certain of its propane purchase contracts at substantially reduced prices which will have a positive effect on earnings for the last quarter of this year. However, the full effect of these price reductions are not expected to be realized until 1969.

NEW PROJECTS

At the last annual meeting the Chairman outlined the Company's intended policy of employing its substantial cash and credit resources to integrate and diversify in the energy field. Three positive steps toward fulfilment of this objective have already been taken.

CANADIAN HOMESTEAD OILS LIMITED

On July 26, 1968 Hydrocarbons signed an agreement with Canadian Homestead Oils Limited under which Hydrocarbons plans to spend $18,200,000 on exploration and development through Homestead over a 9-year period in exchange for treasury shares. Under the terms of the agreement $9,000,000 is committed at a price of $5.50 per share for Homestead treasury shares, with the balance under option at a price of $6.67 per share.

An integral part of the plan is a general offer by Hydrocarbons to acquire all the 2,548,915 outstanding and reserved shares of Castle Oil & Gas at $1.00 per share. Castle owns approximately 18% of Homestead's outstanding common shares in addition to interests in producing and non-producing oil and gas properties. Both the agreement with Homestead and the offer to the shareholders of Castle are subject to the approval of the Homestead shareholders. If approval is obtained at a special shareholders' meeting to be called for September 13, 1968 Hydrocarbons could spend a maximum of $20,750,000 and would then control 51% of Homestead's outstanding shares.

Homestead is a substantial and well managed Canadian independent exploration company. Gross revenue for the fiscal year just ended will be in excess of $2,000,000 with cash flow exceeding $1,000,000. Over the past 5 years this company, with limited financial resources, has compounded its oil and gas reserves at an average annual rate in excess of 30%. The large increase in funds available for exploration will materially enhance this company's prospects for major success.

FORT ST. JOHN PETROLEUMS LTD.

The Directors of Hydrocarbons and Fort St. John Petroleums Ltd. have approved an agreement under which Hydrocarbons will obtain 950,000 treasury shares of Fort St. John and a note in the amount of $300,868 which is convertible into common shares of Fort St. John at $1.00 per share to December 31, 1968, in exchange for $1,250,868 of propane marketing facilities located on Vancouver Island and previously owned by Rockgas Propane Ltd., a CHL subsidiary. The agreement is conditional upon an increase in the authorized capital of Fort St. John. The Fort St. John shares obtained through this transaction, together with the 548,843 shares currently held by Hydrocarbons, will represent 49% of Fort St. John's outstanding shares. Conversion of the note will result in the ownership of 54% of Fort St. John's outstanding common shares by the Hydrocarbons Group.

Fort St. John, through its subsidiary Vancouver Island Gas Company Ltd., owns the butane/air utility franchise for the city of Nanaimo on Vancouver Island, together with producing and non-producing oil and gas properties, and will acquire from Hydrocarbons propane marketing outlets in the cities of Victoria, Duncan, Nanaimo, Courtenay, Alberni, Campbell River and Port McNeill on Vancouver Island. Gross revenue of Fort St. John for the first full year of operations will be in the order of

$1,500,000, with net earnings of approximately $119,000. The Company plans $2,000,000 of capital investment for the expansion of these facilities over the next 3 years.

Consolidation of these LPG holdings will permit improved operating efficiencies. As a result of the association with Hydrocarbons, the largest LPG marketer in Canada and the operator of 37 gas and electric utilities, numerous benefits will accrue to Fort St. John. These include strong financial backing and access to specialized management skills. In addition, Fort St. John will be able to avail itself of Hydrocarbons' volume purchasing of LPG products and assurance of supply.

It is anticipated that natural gas will reach Vancouver Island within the next 2 or 3 years. Fort St. John, with its well established position on the Island, will be in a favorable position to further penetrate its already broad marketing area.

NORTH AMERICAN URANIUM CORPORATION

Through its wholly-owned subsidiary, North American Uranium Corporation, Hydrocarbons is participating in two important U.S. uranium plays — one in the Uravan Mineral Belt of Western Colorado, and the other in the Lisbon Valley area of Western Utah. North American Uranium Corporation has undertaken exploration and development work to earn a 40% interest, with an option to purchase an additional 10% interest, in a total of approximately 1,500 claims (30,000 acres) held by a group headed by Columbian Northland Exploration Ltd.

Exploration drilling has commenced on a 15,000 acre block located near Slick Rock in the Uravan Mineral Belt in Western Colorado. The primary objective of this drilling is the Salt Wash member of the Jurassic Morrison formation. To date this member has produced approximately 40% of the total U.S. uranium reserves and is the source of a substantial percentage of U.S. vanadium reserves. These claims are located on known mineralized Salt Wash ore trends adjacent to the large producing mines of Union Carbide and Climax Uranium. (The Union Carbide Mine has produced 400,000 tons of ore with an approximate gross value of $15,000,000.)

Initial drilling on the Company's claims has discovered uranium-vanadium ore comparable to the average grade and thickness mined in the Uravan Mineral Belt (average thickness 3', average 0.22% uranium, average 1.7% vanadium). This ore has a value of about $30.00 per ton at the mine head. The extent of these discoveries will be defined by extensive drilling.

Drilling is expected to start soon on another 15,000 acre block located in the Lisbon Valley district of Utah. These claims are located near the Charles Steen Mine — production from which has aggregated $67,000,000, and the Rio Algom Property — on which substantial ore tonnages have been developed, with plans underway for shaft sinking and mill construction. The drilling objective in this area is the Basal Sand and conglomerate member of the Triassic Chinle formation, from which approximately 38% of the U.S. uranium reserves have been produced.

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Through the Homestead arrangement Hydrocarbons will expand its participation in the exploration and development phase of the Canadian oil and gas industry. The Fort St. John acquisition will extend the Company's position on Vancouver Island. The decision to enter the search for uranium is based on the rapidly developing shortage of uranium and the predicted substantial price rise for this important energy source in the early 1970's. These undertakings both complement and strengthen the Company's present operations. In addition, they represent vehicles by which Hydrocarbons can seek the substantial rewards available through exploration for petroleum and other mineral resources.

Calgary, Alberta
August 26, 1968

Chairman of the Board

CANADIAN HYDROCARBONS LIMITED and its subsidiaries

	Six Months Ended June 30 1968	1967
OPERATING RESULTS		
Gross Revenue	**$17,171,518**	$15,722,655
Expenses		
Cost of gas and merchandise sold	**$ 7,934,114**	$ 7,132,071
Operating, selling and administrative expenses	**4,557,197**	4,411,553
Interest and expense on long term debt	**668,676**	492,317
Depreciation and depletion	**1,538,957**	1,327,725
Minority interest in earnings	**89,475**	90,000
	$14,788,419	$13,453,666
Earnings before income taxes	**$ 2,383,099**	$ 2,268,989
Income taxes (Note 1)	**332,000**	347,000
Net earnings for the period	**$ 2,051,099**	$ 1,921,989
Earnings applicable to common shares (Note 2)	**$ 1,720,309**	$ 1,655,839
Common shares outstanding	**2,116,954**	2,096,830
Earnings per common share (Note 2)	**81¢**	79¢
SOURCE AND APPLICATION OF FUNDS		
Funds were provided from		
Operations		
Net earnings for the period	**$ 2,051,099**	$ 1,921,989
Add depreciation and depletion	**1,538,957**	1,327,725
Cash flow from operations	**$ 3,590,056**	$ 3,249,714
Shares issued		
Common	**166,899**	6,062,500
First preferred Series "A"	**—**	60,000
Second preferred Series "A"	**—**	6,500,000
Disposal of fixed assets	**612,322**	694,046
Additional long term debt	**14,405**	—
	$ 4,383,682	$16,566,260
Funds were applied to		
Investment in common shares of Great Northern Gas Utilities Ltd.	**$ —**	$12,685,002
Less working capital at date of acquisition	**—**	1,446,234
		11,238,768
Purchase of fixed assets	**1,526,832**	1,398,290
Dividends on common and preferred shares	**654,374**	485,750
Reduction of long term debt	**454,533**	481,420
Redemption of first preferred shares	**36,500**	24,000
Other	**(39,570)**	126,017
	$ 2,632,669	$13,754,245
Increase in working capital during the period	**$ 1,751,013**	$ 2,812,015

(Subject to audit and adjustment at year end)

NOTES

(1) Income taxes previously reported for the six months ended June 30, 1967 amounted to $856,000, whereas the actual income taxes for the year ended December 31, 1967 were $587,000. The substantial reduction in income taxes was attributable to the purchase of oil and gas properties subsequent to June 30, 1967, resulting in an effective income tax rate for the year of 14.7%. Accordingly, the 1967 income tax provision has been restated to an amount equal to the effective rate for the year applied to the income for the six month period.

The Company intends to continue its policy of investing in oil and gas properties and the provision for income taxes for the six months ended June 30, 1968 is based on the estimated income tax provision for the full 1968 year after giving effect to such additional investment.

(2) Dividends on the 6% Second Preferred Shares amounted to $195,000 for the six months ended June 30, 1968 compared to $130,000 for the same period last year as the Second Preferred Shares were issued during the latter part of the first quarter of 1967. Accordingly, this reduced earnings available to common shareholders by $65,000 or 3c per share for 1968.

Consolidated Statement of Changes in Financial Position

Six Months Ended June 30, 1977 and 1976
(thousands of dollars)

	1977	1976
Funds Provided		
Funds from operations .	**$ 7,329**	$ 7,750
Disposals of fixed and other assets	**577**	639
Additional long term debt	**—**	3,267
	7,906	11,656
Funds Applied		
Net investment in subsidiaries	**—**	383
Additions to fixed assets	**5,593**	3,506
Dividends on preferred and comon shares . . .	**930**	935
Reduction of long term debt	**3,501**	4,789
Investment in Canadian Homstead Oils Limited	**750**	1,400
Other	**485**	380
	11,259	11,393
Increase (Decrease) in working capital	**($ 3,353)**	$ 263

(unaudited)

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CANADIAN HYDROCARBONS LIMITED

REPORT TO SHAREHOLDERS

SIX MONTHS ENDED JUNE 30, 1977

TO THE SHAREHOLDERS

Net earnings for the 6 months ended June 30, 1977 were $3,034,000 compared with $3,364,000 for the first half of 1976. Net earnings of 54¢ per common share compare with 60¢ for the same period last year.

Warmer than normal weather, particularly in the first quarter of the year, reduced consumption of both propane and natural gas and resulted in a reduction in net earnings of approximately 15¢ per share.

Increased sales in the low margin forest products division improved net earnings of that division but did not offset a substantial reduction in earnings of the steel products division.

On May 17, 1977 Inter-City Gas Limited announced the making of a share exchange offer for all the outstanding shares of Canadian Hydrocarbons Limited. The basis of the offer will be one and one half common shares of Inter-City for each common share of Canadian Hydrocarbons and will be conditional upon not less than 60% of the shares of Canadian Hydrocarbons not now owned by Inter-City Gas being tendered for exchange.

Inter-City now owns 49.8% of the total outstanding common shares of Canadian Hydrocarbons.

The offer will be made only by means of a prospectus after the necessary securities registration requirements are met in Canada and the United States. Inter-City Gas Limited expects that these registration and other requirements can be met by year end.

R. G. GRAHAM
President

August 15, 1977

Consolidated Statement of Earnings

Six Months Ended June 30, 1977 and 1976
(thousands of dollars)

	1977	**1976**
Revenue	**$177,612**	$158,589
Expenses		
Cost of sales	**138,997**	119,816
Operating, selling and administrative expenses	**25,316**	23,512
Interest and expenses on long term debt	**2,401**	2,583
Other interest expense	**1,070**	926
Depreciation and depletion	**4,221**	5,245
Minority interest in earnings of subsidiaries	**210**	145
	172,215	152,227
Earnings before income tax	**5,397**	6,362
Income taxes	**3,035**	3,388
Earnings before equity in net earnings of affiliate	**2,362**	2,974
Equity in net earnings of affiliate	**683**	390
Net earnings for the period	**$ 3,045**	$ 3,364
Net earnings applicable to common shares	**$ 2,756**	$ 3,071
Average number of common shares outstanding	**5,130,306**	5,129,680
Net earnings per common share	**54¢**	60¢

(unaudited)

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REPORT TO SHAREHOLDERS

SIX MONTHS ENDED JUNE 30, 1970

TO THE SHAREHOLDERS

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Average number of common shares outstanding	**5,130,306**	5,129,680
Net earnings per common share	**54¢**	60¢

(unaudited)

Consolidated Source and Application of Funds

	Six Months Ended June 30 1970	1969
Funds were provided from:		
Operations		
Net earnings for the period	$ 3,273,245	$ 2,712,567
Depreciation and depletion	3,296,744	2,025,282
Deferred income taxes	67,016	
Other non cash items	(300,624)	(172,838)
Cash flow from operations	6,336,381	4,565,011
Additional long term debt	10,723,296	6,481,017
Disposal of fixed assets	174,006	237,488
Common shares issued	21,538	429,982
Other	180,459	
	17,435,680	11,713,498
Funds were applied to:		
Investment in common shares of subsidiaries	11,925,000	
Less working capital at date of acquisition	2,199,964	
	9,725,036	
Purchase of fixed assets	2,062,492	5,758,770
Reduction of long term debt	2,787,947	772,500
Dividends on common and preferred shares	817,590	689,574
Investment in Canadian Homestead Oils Limited	729,317	326,530
Other		211,289
	16,122,382	7,758,663
Increase in working capital during the period	$ 1,313,298	$ 3,954,835

(Subject to adjustment and year end audit).

See notes to Consolidated Earnings Statement.

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CANADIAN HYDROCARBONS LIMITED

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REPORT TO SHAREHOLDERS

SIX MONTHS ENDED JUNE 30, 1970

TO THE SHAREHOLDERS:

For the first six months of 1970 consolidated net earnings of Canadian Hydrocarbons Limited showed a 21% increase over the comparable period of 1969, rising to $3,273,245 from the previous year's $2,712,567. Net earnings applicable to common shares after preferred share dividends were $2,950,752, representing a 23% increase over the same period for 1969. The equivalent net earnings per common share were 60¢, compared to 54¢, an increase of 11% (based on the 4,954,072 shares outstanding at June 30, 1970 vs the 4,422,182 average shares outstanding on June 30, 1969). Cash flow from operations amounted to $6,336,381, compared with $4,565,011 for the first six months of last year. These operating results were obtained from gross revenues of $36,846,715, which rose 50% over the $24,596,182 for the same period in 1969.

Working capital at June 30, 1970 was $19,986,549, compared with $11,047,285 at June 30, 1969.

Sales volume increases were achieved in all phases of the Company's operations.

PETROLEUM MARKETING

The integration of the marketing and refining operations of Big West Oil Company with Westland Oil Company has been completed. The operating efficiencies now being introduced will permit this new U.S. operating unit to make a contribution to consolidated earnings in the final quarter of this year.

The company recently expanded its marketing activities into the greater Seattle area through the acquisition of Sterling Stations, Inc., a retail marketer of gasoline which operates four large volume service stations.

In line with the Company's continuing acquisition program, negotiations are near completion for the purchase of several small petroleum companies in both the United States and Canada.

The gallonage of propane, gasoline and other liquid petroleum products reached the record level of 136 million gallons, compared to 89 million gallons in 1969, an increase of 53%.

UTILITY OPERATIONS

In addition to the usual expansions of existing systems, the Company is proceeding with the construction of systems in two new franchise areas and two new rural areas. One town is also being converted from propane vapour to natural gas. Sales volumes for the six months ending June 30th, 1970 were 7,433,000 MCF, compared to 6,262,000 MCF for 1969, an increase of 19%, which is reflected in increased profit contribution.

OIL & GAS PRODUCTION AND EXPLORATION

Oil and gas production revenue, including sub leases, for the first six months of 1970 was $2,251,417, compared to $928,383 for the first half of last year.

In July of the current year CHL, through a wholly owned U.S. subsidiary, initiated an oil and gas exploration program in Texas which will result in the drilling of a minimum of 16 wells during the balance of the current year.

MINING ACTIVITIES

Shaft sinking on the Company's uranium property in Colorado is near completion. It is anticipated that ore shipments will commence the middle of September.

Field surveys are being conducted on the Company's mineral exploration permit in Northern Saskatchewan, following up encouraging anomalies encountered through aerial radiometric surveys.

Chairman of the Board.

August 20, 1970.

Consolidated Earnings

	Six Months Ended June 30	
	1970	**1969**
OPERATING RESULTS		
Gross Revenue	**$36,846,715**	$24,596,182
Expenses		
Cost of Sales	**19,769,605**	12,182,274
Operating, selling and administrative expenses	**8,103,053**	6,094,053
Interest and expense on long term debt .	**1,391,716**	863,542
Depreciation and depletion	**3,296,744**	2,025,282
Minority interest in earnings of subsidiaries . . .	**141,966**	156,464
	32,703,084	21,321,615
Earnings before income taxes	**4,143,631**	3,274,567
Income taxes	**870,386**	562,000
Net earnings for the period	**$ 3,273,245**	$ 2,712,567
Earnings applicable to common shares . .	**$ 2,950,752**	$ 2,396,667
Common shares outstanding	**4,954,072**	4,422,182
Earnings per common share	**60¢**	54¢

(Subject to adjustment and year end audit).

NOTES:

1. The floating of the Canadian dollar in June, has resulted in an unrealized foreign exchange loss of approximately $140,000 (net of applicable income taxes) with respect to the short term investment of the proceeds from the issue in the United States in November 1969 of 500,000 common shares. The proceeds have remained invested in U.S. dollars since the date of sale. No adjustment has been recorded as the Company does not consider it prudent to make an adjustment until the foreign exchange rate has stabilised or the Canadian dollar is again pegged.
2. For purposes of comparison, the 1969 income tax provision has been restated to reflect actual income tax expense for 1969, allocated to this period. Certain of the 1969 accounts have been reclassified to conform with the classification of accounts used for the year ended December 31, 1969 and the six months ended June 30, 1970.